

REMARKS

Status of the Claims

The present application has been reviewed in light of the Office Action dated December 22, 2006. Claims 1 and 4-19 are presented for examination, of which Claims 1 and 19 are in independent form. Claim 1 has been amended to define more clearly what Applicants regard as their invention, and Claims 4-19 have been amended purely as to matters of form. Favorable reconsideration is requested.

Applicants note with appreciation the indication that Claims 7-9 include allowable subject matter and would be allowable if rewritten in independent form. Applicants respectfully decline to so rewrite Claims 7-9 at this time, for at least the reason that their base claim is believed to be allowable, as discussed below.

Applicants also gratefully acknowledge the indication the Claim 19 includes allowable subject matter and would be allowable if rewritten to overcome certain informalities noted in section 2 of the Office Action. The noted informalities have been corrected by the present Amendment, and therefore Applicants respectfully submit that Claim 19 is allowable.

Initial Matter

As an initial matter, an Information Disclosure Statement and a corresponding PTO-1449 form were submitted on May 5, 2006, as evidenced by information available from the PAIR system of the U.S. Patent and Trademark Office. Applicants respectfully request the Examiner to return an initialed copy of the PTO-1449 form, indicating that the reference listed thereon has been considered and made of record in the present application.

Prior-Art Rejections

Claims 1, 4-6, 10-13, and 16-18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,172,894 (“Hein”) in view of U.S. Patent No. 5,887,859 (“Hadano”). Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hein in view of Hadano, and further in view of U.S. Patent No. 6,622,996 (“Mayerbock”). Claim 15 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hein in view of Hadano, and further in view of U.S. Patent No. 5,301,414 (“Gautheron”).

Claim 1 is directed to a hydroelastic joint for assembling pieces of a structure and for damping vibrations transmitted between the pieces. The joint includes an external reinforcement, an intermediate reinforcement, an internal reinforcement, and an assembly forming a hydroelastic spring. The assembly is disposed between the external and intermediate reinforcements in order to permit a relative transverse displacement between the external and intermediate reinforcements. The assembly includes a first elastically deformable element shaped to delimit between the external and intermediate reinforcements at least one sealed volume containing damping fluid.

The joint further includes, for each sealed volume, a longitudinal boss separating said sealed volume into a plurality of chambers, and additionally includes a second elastically deformable element disposed between the intermediate reinforcement and the internal reinforcement. The second elastically deformable element has a longitudinal dimension less than a corresponding longitudinal dimension of the first elastically deformable element, in order to limit a transverse deformation of the first elastically deformable element during a relative tilting of the longitudinal axes of the external and internal reinforcements about at least one transverse tilting axis.

The longitudinal dimension of each of the first and second elastically deformable elements are defined as an axial dimension of a portion that substantially fills a radial space between corresponding ones of the reinforcements. The intermediate reinforcement is disposed between the first and second elastically deformable elements, such that the first and second elastically deformable elements adhere on a central portion with a constant cross-section of the intermediate reinforcement, and such that the second elastically deformable element adheres on a central portion with a constant cross-section of the internal reinforcement.

One of the notable features of Claim 1 is that, for each sealed volume formed by the external and intermediate reinforcements, a longitudinal boss separates the sealed volume into a plurality of chambers. The sealed volume includes damping fluid that, as explained on pages 16-17 of the specification, selectively moves between the plurality of chambers in an effort to maintain an equilibrium fluid pressure between the plurality of chambers.

Applicants respectfully submit that the longitudinal boss is not new subject matter added to the claims of the present application. Instead, the longitudinal boss was among the allowable subject matter of Claim 7.

Other notable features of Claim 1 are that the first and second elastically deformable elements adhere on a central portion with a constant cross-section of the intermediate reinforcement, and that the second elastically deformable element adheres on a central portion with a constant cross-section of the internal reinforcement.

Hein, as discussed in previous Amendments, relates to an elastomeric/fluid engine mount having an outer elastically deformable element (outer spring assembly 7) and an inner elastically deformable element (inner spring assembly 6). The inner spring assembly 6 has recessed portions 11 and 12. As previously noted, Hein's inner spring assembly 6 is fitted

without adhering inside the outer spring assembly 7. This can be seen from the rounded ends of inner spring 9 and reinforcement 15 (see Fig. 2) and from the fitting stop (on the right side of reinforcement 15), which is designed to stop the inner sleeve 10 and inner spring assembly 6 as they are longitudinally inserted into the assembly.

According to Applicants' understanding, the inner spring assembly 6 of Hein is fitted in the reinforcement 15 without having the inner spring 9 adhere on the reinforcement 15. Presumably, this allows for easy replacement of the inner spring assembly 6. However, this is believed to teach away from having first and second elastically deformable elements that adhere on a central portion with a constant cross-section of an intermediate reinforcement, as claimed in Claim 1.

Additionally, Hein fails to show or suggest a longitudinal boss, as claimed in Claim 1. (Again, this subject matter was among the allowable subject matter of Claim 7.)

Hadano relates to a suspension bushing and was cited by the Examiner for disclosing "an elastic joint having annular voids located between longitudinally aligned reinforcements." According to the Examiner, the "large voids contribute to a reduction in rigidity in the torsional direction of the joint."

As understood by Applicants, Hadano fails to teach or suggest the use of first and second elastically deformable elements that adhere on a central portion with a constant cross-section of an intermediate reinforcement, as claimed in Claim 1. Further, nothing has been found in Hadano that is understood to disclose or suggest the use of a longitudinal boss, as claimed in Claim 1. (Again, a longitudinal boss was among the allowable subject matter of Claim 7.)

It is alleged in the Office Action that, when modifying the recesses 11 and 12 of Hein in order to tune the inner spring 9 to a desired spring rate, a person skilled in the art would

have considered the large voids of Hadano and would have maximized the size of the recesses 11 and 12, to such an extent that they would have to be taken into account when determining the length of the inner spring 9.

Applicants respectfully disagree and submit that, because the inner spring 9 does not adhere on the intermediate sleeve 15, the recesses 11 and 12 can only be provided if they have a small width and a small depth. Otherwise, the remaining portion of the inner spring 9 would not be sufficient to dampen vibration between the reinforcement 15 and the sleeve 10 and 15 without slipping and without play. This would produce the undesirable qualities of noise and quick wear. In other words, the size of the recesses 11 and 12 could only be varied to a small extent and therefore the recesses 11 and 12 cannot properly be taken into account for the length of the inner spring 9.

Accordingly Claim 1 is believed to be patentable over any permissible combination of Hein and Hadano.

The other rejected claims in the present application depend from Claim 1 and therefore are believed patentable for at least the reasons discussed above. Because each dependent claim also is deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each on its own merits is respectfully requested.

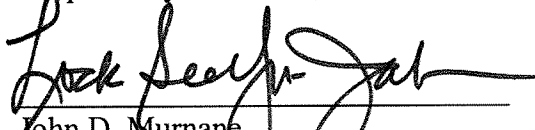
CONCLUSION

This Amendment After Final Action is believed clearly to place the present application in condition for allowance. Therefore, entry of this Amendment under 37 C.F.R. § 1.116 is believed proper and is respectfully requested, as an earnest effort to advance prosecution and reduce the number of issues. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



John D. Murnane
Registration No. 29,836

Lock See Yu-Jahnes
Registration No. 38,667

Attorneys for Applicants

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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